



**TOPSPARE PARTS**  
COMMUNICATIONS  
AUTHORIZED DEALER

## ▶ Erdenes Tavantolgoi Mining LLC (ETT) (Supplied by Topspare Parts LLC)

### Supporting Productivity and Future Growth at a World-Class Coal Mine in Mongolia with NEXEDGE Multi-site Digital Trunking System

*Mines present a challenging environment for radios, and the sprawling operations at Tavan Tolgoi are no exception. However, in 2018 ETT Mining adopted a NEXEDGE multi-site digital trunking system that offers coverage and clarity that far surpass the old analog communications system while serving as a springboard for future expansion.*

#### **Interviewee:**

Mr. GURDAVAA Gurragcha  
Executive Director, Topspare Parts LLC



#### **Business scale and operations**

Erdenes Tavan Tolgoi LLC (ETT Mining) is a subsidiary of Erdenes MGL, a Mongolian state-owned enterprise that owns Tavan Tolgoi coal mines, which boast one of the world's largest deposits of untapped coking and thermal coal – an estimated 6.4 billion tons, expected to last for up to 100 years.

Tavan Tolgoi is located in the southern portion of the hilly Gobi steppe, 540 km south of the capital Ulaanbaatar, at an altitude of over 1,500 meters. Of the six coalfields in this area, Tsankhi is the largest. It is divided into two sections, East and West, which are 10 to 15 kilometers apart. ETT Mining, which has been managing the development of East and West Tsankhi, aims to become a major supplier of coal by harnessing advanced mining practices; at the same time, it is keen to demonstrate sustainable development.

#### **Challenges**

Since 2012, traditional analog radios of different brands were used in both East and West Tsankhi. Mobile radios were equipped on cranes, ladders, bulldozers, and dump trucks, while portables were carried by ground crew, including chief miners, repairmen, camp managers and other administrative staff. However, the area that needs to be covered is vast, totaling over 200,000 square meters. The inherent limitations of analog technology and the provision of only a single channel led to increasingly poor communications. ETT Mining was looking for a solution when they were introduced to NEXEDGE radios by Topspare Parts, a KENWOOD supplier.

#### **Reasons for selecting NEXEDGE**

- Extensive coverage – 5 to 10 km direct, 30 to 40 km with 50-watt trunking
- Excellent audio clarity even in areas with weak signal strength
- Efficient radio spectrum using 12.5 kHz & 6.25 kHz channel spacing
- Well-disciplined communications, intuitive operation
- Secure voice and data with NXDN 15-bit key scrambling
- Skilled authorized dealer offering prompt support 24/7.

## How did the product(s) and service(s) help the customer?

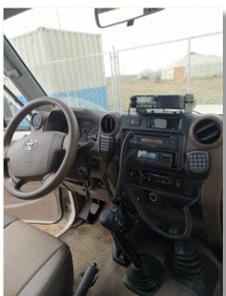
The solution was provided by Topspare Parts LLC, a KENWOOD dealership in Mongolia. In 2018, East Tsankhi successfully migrated to a NEXEDGE multi-site digital trunking system (NXDN Type-C) offering extensive coverage, excellent spectrum efficiency, and secure communications.

After installation, a coverage test was performed using NX-3720 radios and the results were more than satisfactory. Moreover, the dealer provided quick installation, fast response, and outstanding after-sales service.

As soon as the switch was made to digital radios, the difference in audio clarity was immediately clear. Gone was the background noise. The noise canceller ensured that the audio was very clear and effective range was also improved.

## Solutions

Approximately 800 subscriber units (70% mobiles, 30% portables) are currently in use in the East Tsankhi section, connected via four sites, 18 repeaters and 15 talk channels, using both 12.5 kHz and 6.25 kHz channel spacing. There is also a KAS-20 dispatcher, which features an intuitive GUI and electronic map displays to ensure easy operation.



A typical vehicle-mount mobile radio

Additionally, this system offers inherent security against casual electronic eavesdropping. Subscriber units also feature the NXDN 15-bit key scrambling function for secure voice & data communications. And, best of all, the high CNR (carrier-to-noise ratio) provided by NXDN's narrower 6.25 kHz bandwidth mode means that radios can communicate over greater distances, making it ideal for large sites like the Tsankhi coalmines.

ETT Mining knows it can fully rely on the support of the experienced and skilled staff at Topspare Parts LLC should any problems occur, or when the time comes to expand the system.

## Future prospects

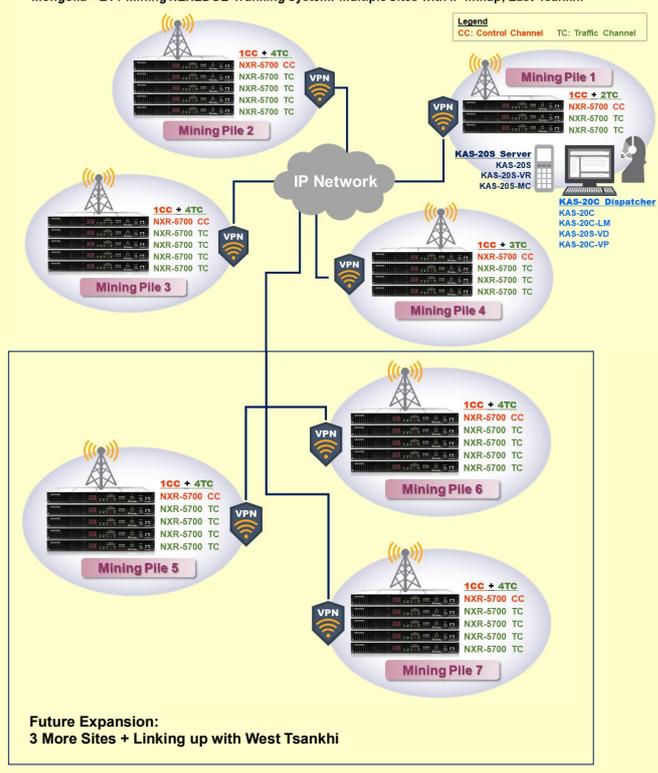
Following Phase III development of the coal mine, a major expansion of this multi-site digital trunking system will involve linking East Tsankhi and West Tsankhi sections. This will add three new sites to make a total of seven (populated by 7 CC + 26 TC units), and support 2,000 mobile radios and 500 portables.



### ETT Mining NEXEDGE Trunking System: Multiple Sites with IP Linkup

Each site has two antennas, rack-mounted repeaters, duplexers, power supply, backup batteries, and a VPN router with IP linkup. As mining operations rapidly progress, Phase III will involve not only adding pile sites but also relocating them. Growth brings new challenges, but nothing that NEXEDGE cannot accommodate.

Mongolia – ETT Mining NEXEDGE Trunking System: Multiple Sites with IP linkup, East Tsankhi



### Customer:

- Erdenes Tavan Tolgoi Mining LLC

### Supplier:

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### Web Links:

- KENWOOD Professional Digital Two-way Radios [comms.kenwood.com](http://comms.kenwood.com)
- Tavan Tolgoi LLC [www.tavantolgoi.mn](http://www.tavantolgoi.mn)
- Topspare Parts LCC [www.radioservice.mn](http://www.radioservice.mn)

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